



**CONFIDENTIAL**

APPLICATION FOR  
U.S. LETTERS PATENT  
FOR

**"ILLUMINATED PET LEASH"**

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# "ILLUMINATING PET LEASH"

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

The present invention relates to pet leashes and, more particularly, to an illuminating pet leash having an isolated tethering line, and, still more particularly, to an illuminating pet leash comprising a flexible and strong tethering line enclosed in an elongated illuminating light source assembly, wherein the tethering line is isolated from the light source assembly.

### 2. General Background

Pet leashes or other pet tethering devices are constructed to restrain the distance a pet can move from one end of the leash or tethering device being held. Therefore, the pet leash typically includes a flexible strap, made of nylon, leather, plastic or the like, or a chain of metal links secured together. The pet leash channels the pulling and tugging forces exerted by the pet to the hand holding the pet leash.

Several devices have been patented that are aimed at illuminating pet leashes or ropes.

U.S. Patent No. 5,967,095, issued to Greves, entitled "ILLUMINATED PET LEASH," discloses a pet leash

with a elongated strap having an (electro-luminescent) EL strip secured to an one side of the strap. In another embodiment, the leash has a circular (or other geometric shape) strap with the EL strip spiraling around the circular strap.

U.S. Patent No. 5,850,807, issued to Keeler, entitled "ILLUMINATED PET LEASH," discloses an illuminated pet leash comprising an elongated non-opaque tube having a bundle of optical fibers longitudinally disposed therein.

U.S. Design Patent No. Des. 422,385, issued to Callaghan, entitled "ILLUMINATED PET COLLAR AND LEASH SET," illustrates both a pet leash and collar having a band with spaced illuminating means attached thereto.

Other U.S. patents directed to illuminating articles include U.S. Patent No. 5,071,118, issued to Barnett, entitled "ILLUMINATED JUMP ROPE APPARATUS"; and U.S. Patent No. 5,879,076, issued to Cross, entitled "METHOD AND APPARATUS FOR LIGHT TRANSMISSION".

In view of the foregoing, there is a continuing need for an illuminating pet leash that isolates the tethering line from the elongated light source while simultaneously encasing the tethering line so as not to attract from the

illumination.

As will be seen more fully below, the present invention is substantially different in structure, methodology and approach from that of prior illuminating  
5 pet leashes.

## SUMMARY OF THE PRESENT INVENTION

The preferred embodiment of illuminating pet leash of the present invention solves the aforementioned problems in a straight forward and simple manner.

5           Broadly, the present invention contemplates an illuminating pet leash comprising: a flexible and strong tethering line having first and second free ends and a tethering length; an elongated illuminating light source assembly enclosing the tethering length of said  
10 tethering line; and, a hook member coupled to said first free end and which is adapted to be coupled to a pet collar wherein said tethering line is independent from the elongated illuminating light source assembly so that pulling and tugging forces exerted by a pet on said  
15 first free end are isolated from said elongated illuminating light source assembly.

In view of the above, an object of the present invention is to provide a illuminating pet leash that prevents pig-tailing or curling of the transparent (non-  
20 opaque) tube by absorbing the pulling and tugging forces exerted by the pet by an isolated tethering line encased in the transparent tube.

Another object of the present invention is to

provide an illuminating pet leash that encases an isolated tethering line in a transparent tube and independently affixes the free ends of the tethering line to the leash handle assembly and the hook member  
5 intended to be directly affixed to the pet collar.

In view of the above, a feature of the present invention is to provide an illuminating pet leash that maintains a strong tensile strength while providing a illuminating light source.

10 Another feature of the present invention is to provide an illuminating pet leash that is relatively simple structurally and thus simple to manufacturer.

A further feature of the present invention is to provide an illuminating pet leash that has an elongated  
15 illuminating light source assembly that is available in a variety of colors.

A still further feature of the present invention is to provide an illuminating pet leash that is durable.

The above and other objects and features of the  
20 present invention will become apparent from the drawings, the description given herein, and the appended claims.

### **BRIEF DESCRIPTION OF THE DRAWING**

For a further understanding of the nature and objects of the present invention, reference should be had to the following description taken in conjunction  
5 with the accompanying drawings in which like parts are given like reference numerals and, wherein:

**FIGURE 1** illustrates an exploded view of the illuminating pet leash of the present invention;

**FIGURE 2** illustrates a partial view of an end  
10 of the non-opaque tube of the illuminating pet leash of the present invention; and,

**FIGURE 3** illustrates a cross-sectional view of the handle housing of leash housing assembly of the present invention.

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## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings and in particular **FIGURES 1 - 3**, the illuminated pet leash of the present invention is generally referenced by the numeral **10**. The illuminated pet leash **10** is generally comprised of a flexible and strong tethering line **35**, an elongated illuminating light source assembly **20** enclosing the tethering length of the tethering line **35**, a hook member **80** coupled to a first free end of the tethering line **35** and a leash handle assembly **50** coupled to a second free end of the tethering line **35**. The hook member **80** is adapted to be coupled to a pet collar **2**. The tethering line **35** is independent from the elongated illuminating light source assembly **20** so that pulling and tugging forces exerted by a pet on the first free end of the tethering line **35** are isolated from the elongated illuminating light source assembly **20** as such forces are channeled to the second free end of the tethering line **35**.

The elongated illuminating light source assembly **20**



comprises an elongated transparent tube **22** having an ELite luminous wire **30** (hereinafter referred to as the "EL wire **30**") journalled therethrough. The bottom end **24** of the elongated transparent tube **22** has coupled thereto a connector assembly **40** for attachment to the pet collar **2**. The top end **26** of the elongated transparent tube **22** has coupled thereto the leash handle assembly **50**. (As in U.S. PATENT 5,879,076 to Cross - "within the tube or casement formed by the backing and translucent strips of material is a light-transmitting device ... which consists of one or more elongated members ... of a substantially transparent or clear thermoplastic material of a form commonly known as a hot-melt adhesive material; which material includes an adhesive primarily composed of an ethylene-vinyl acetate manufactured by the H. B. Fuller Company of St. Paul, Minn. and denoted as stock No. 110, a low-density polyethylene manufactured by Ad-Tech Plastic Systems Corp., a division of Adhesive Technologies and denoted as a "Crafty" hot-melt adhesive, "Crafty" being a registered trademark of Ad-Tech Plastic

Systems Corp., a polypropylene thermoplastic, or a polyamide adhesive denoted as #7820 Hysol manufactured by Hysol Engineering Adhesives of Seabrook, N.H. All of the above-identified materials have great flexibility and have a high degree of clarity or transparency. The H. B. Fuller ethylene-vinyl acetate material comes in pellet, pillow and rods of indeterminate lengths. These rods are highly flexible and the degree of transparency is dictated by the heating of the material in the range of 300 to 350 degrees F. and rapidly cooling the material.")

Referring now to **FIGURE 3**, the leash handle assembly **50** includes a hollow housing structure **52** dimensioned to fit within the palm of the hand and having a removable lid **54**, at one end. The removable lid **54** has coupled thereto a looped strap **58** adapted to be slipped around the wrist. The hollow housing structure **52** also includes a bottom member **56** secured to an opposite end.

In the exemplary embodiment, the removable lid **54** has threads on the interior wall surface thereof. The one end of the hollow housing structure **52** has threads on

the exterior wall surface which mate with the threads of the removable lid **54**. The hollow housing structure **52** has coupled thereto a pop rivet **62** for connection of the tethering line **35**. The pop rivet **62** secures to the top  
5 end of the tethering line **35** to the leash handle assembly **50**.

In the exemplary embodiment, the tethering line **35** is a leader line having a tensile strength of at least 120 pounds. In the preferred embodiment, the leader line  
10 is made of steel or other strong material but remains relatively lightweight. The tethering line **35** since isolated from the elongated transparent tube **22** and EL wire **30** prevents the elongated transparent tube **22** and/or EL wire **30** from being stretched.

15 The elongated transparent tube **22** is made of a generally vinyl or plastic flexible tubular material that allows illuminating light to be readily seen.

The top end **24** of the elongated transparent tube **22** has coupled thereto connector assembly **70** for securing  
20 the elongated transparent tube **22** to the leash handle

assembly **50** through hole **60** formed in bottom member **56**.

The elongated illuminating light source assembly **20** further comprises an electrical illuminating circuit **63** housed in the leash handle assembly **50** and includes a  
5 push-button on/off switch **64** coupled to a battery circuit **66**. The electrical illuminating circuit **63** further includes a DC-to-AC converter **68** coupled to the battery circuit **66** and to the top end of the EL wire **30**.

Connector assembly **40** and **70** are similar and each  
10 include a coaxial cable coupler or the like. The connector assemblies **40** and **70** serve to allow the tethering line **35** to be isolated from elongated illuminating light source assembly **20** as will be seen for the description provide below.

15 Referring now to **FIGURE 2**, the coaxial cable coupler **40** includes a locking sleeve **42** and an open end **44** opposite the locking sleeve **42**. In the exemplary embodiment, the bottom end of the EL wire **30** is capped or insulated inside of the coaxial cable coupler **40**. The

tethering line **35** extends through the open end **44** of the coaxial cable coupler **40** and attached to securing ring **82** on snap hook member **80**. Snap hook member **80** attaches to a loop **3** on collar **2**. The annular structure defining open end **44** has formed therein two holes **46** and receives a slip ring member **48**. Slip ring member **48** is adapted to be secured to securing ring **82** on snap hook member **80**.

In the exemplary embodiment, the tethering line **35** has double strands along the length of the elongated transparent tube **22**. The double strands are formed by a single strand of tethering line **35** divided in half such that the midpoint loops around the securing ring **82** on snap hook member **80**. The two free ends of the doubled strands secure to pop rivet **62**, as best seen in **FIGURE 3**.

In the exemplary embodiment, the securing ring **82** of the snap hook member **80** is coupled to a swivel **84** so that the tethering line **35** does not twist as the pet is tethered.

Referring still to **FIGURE 3**, the coaxial cable

coupler **70** includes a locking sleeve **72** and an open end **74** opposite the locking sleeve **72**. In the exemplary embodiment, the top end of the EL wire **30** is protected and secured in the leash handle assembly **50**, as  
5 previously described. The tethering line **35** extends through the open end **74** of the coaxial cable coupler **70** for attachment to pop rivet **62**.

In operation, as a pet pulls and tugs, the pulling and tugging forces are directly exerted on the tethering  
10 line **35**. Thus, full length of the tethering line **35** measured from the first free end to the second free end should not be capable of being stretched more than the full length of the transparent tube **22** measured from its location beginning outside of bottom member **56** down to  
15 the coaxial cable coupler **40**, the length of coaxial cable coupler **40** down to the end of slip ring member **48** since both the slip ring member **48** and second free end of the tethering line **35** are both tied to the securing ring **82** of the snap hook member **80**. (If necessary, the tethering  
20 or leader line **35** can be adjusted for length, after

assembly or after use. This is accomplished by slipping  
slip ring member 48 off of securing ring 82 on snap hook  
member 80; then, twisting securing ring 82 so that  
tethering or leader line 35 is wound up inside  
5 transparent tube 22 which will shorten the length of  
tethering or leader line 35; then, replacing slip ring  
member or "king ring" 48 through securing ring 82 to  
maintain the appropriate desired length.)

As can be readily appreciated, the EL wire 30 is  
10 preferably an electro-luminescent light source. The  
transparent tube 22 can be available in a variety of  
colors.

Because many varying and differing embodiments may  
be made within the scope of the inventive concept herein  
15 taught and because many modifications may be made in the  
embodiment herein detailed in accordance with the  
descriptive requirement of the law, it is to be  
understood that the details herein are to be interpreted  
as illustrative and not in a limiting sense.

20 What is claimed as invention is: